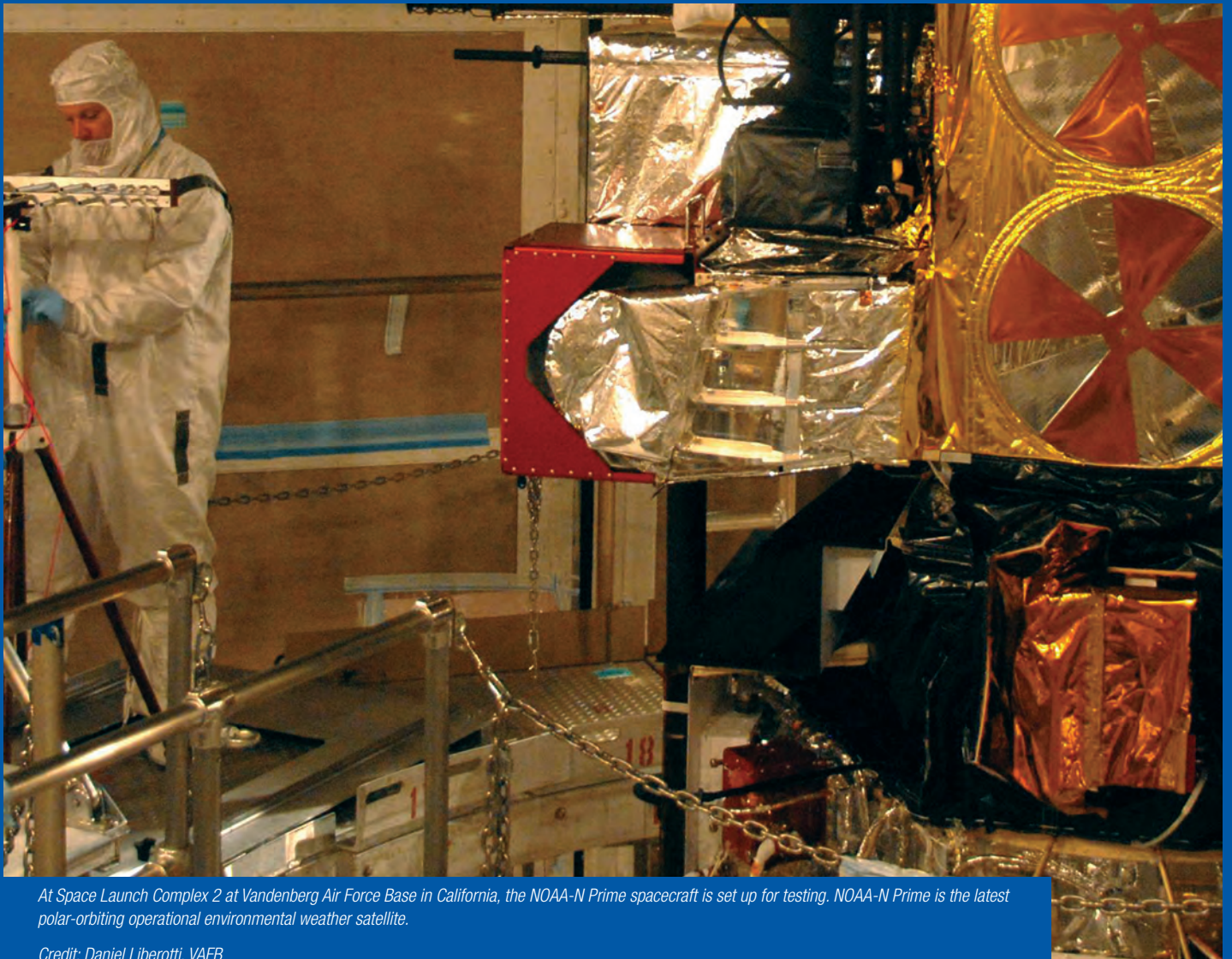




CHAPTER 3 | NOAA PROCUREMENT, ACQUISITION, & CONSTRUCTION

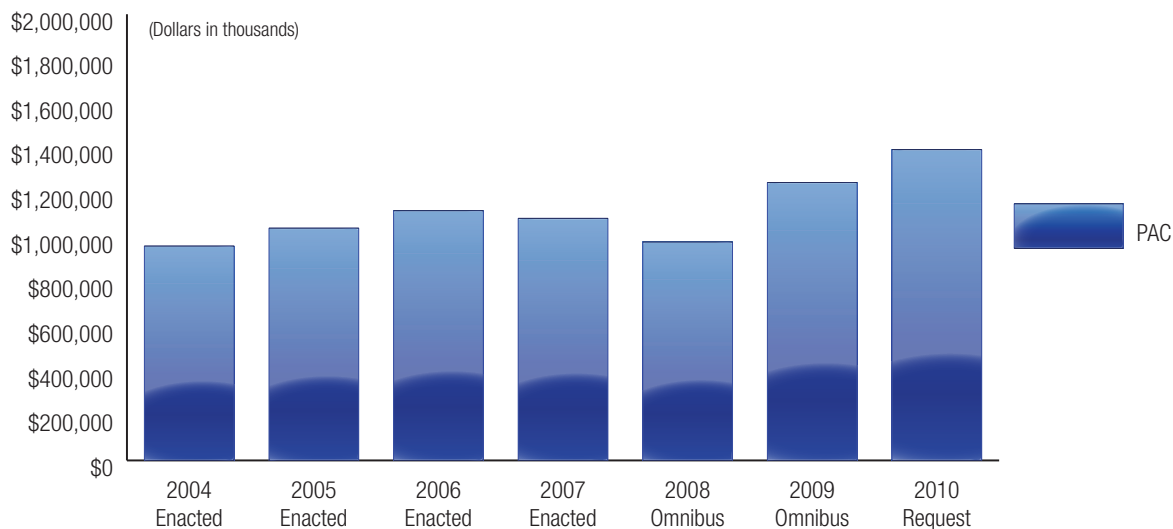


At Space Launch Complex 2 at Vandenberg Air Force Base in California, the NOAA-N Prime spacecraft is set up for testing. NOAA-N Prime is the latest polar-orbiting operational environmental weather satellite.

Credit: Daniel Liberotti, VAFB

**PROCUREMENT, ACQUISITION, AND CONSTRUCTION (PAC)**

(DOLLARS IN THOUSANDS)	FY 2008 OMNIBUS	FY09 OMNIBUS	FY 2010 REQUEST	INCREASE (DECREASE)
National Ocean Service	56,599	46,188	24,385	(21,803)
National Marine Fisheries Service	2,021	4,600	0	(4,600)
Ocean and Atmospheric Research	10,131	11,579	10,379	(1,200)
National Weather Service	106,112	110,951	96,658	(14,293)
National Environmental Satellite, Data and Information Service	775,922	990,579	1,256,857	266,278
Program Support	28,422	81,750	5,000	(76,750)
GRAND TOTAL PAC	979,207	1,245,647	1,393,279	147,632
Total FTE	235	190	190	0
Systems Acquisition	859,308	1,109,277	1,373,162	263,885
Construction	114,640	124,870	15,117	(109,753)
Fleet Replacement	5,259	11,500	5,000	(6,500)
TOTAL	979,207	1,245,647	1,393,279	147,632

Budget Trends FY 2004-2010

PAC: Procurement, Acquisition, & Construction



PROCUREMENT, ACQUISITION, AND CONSTRUCTION (PAC)

NOAA's Procurement, Acquisition, and Construction (PAC) account captures the cost of acquiring and improving capital assets, which are mission-critical to all agency programs and contribute significantly to achieving each of NOAA's Strategic Goals. This account is grouped by line office into three common activities: (1) "Systems Acquisition," which includes projects that will have a major impact on NOAA's ability to monitor and to forecast weather and climate change on a global basis; (2) "Construction," which includes projects involving new construction, or major modification of existing facilities; and (3) "Fleet and Aircraft Replacement," which includes funding to support modernization of NOAA's fleet of ships and aircraft either through new construction, major modification to existing assets, or long-term acquisition of capacity from third parties.



National Weather Service Supercomputer

ADJUSTMENTS TO BASE:

The NOAA Procurement, Acquisition, and Construction (PAC) requests adjustments to FY2010 Base of \$1,000,000 and 0 FTEs to transfer base construction funds from the NOAA Center for Weather and Climate Prediction to the Operations, Research and Facilities (ORF) account to reflect the transition from the construction phase of the project to long-term operations and maintenance.

PAC PROGRAM CHANGE HIGHLIGHTS FOR FY2010:

NOAA requests a net increase of \$214,886,000 and 0 FTEs for a total of \$1,393,279,000 for the PAC programs. Detailed numeric breakouts are located in Chapter 5, Special Exhibits. Descriptions of each request by line item are located in the NOAA FY 2010 Technical Budget.

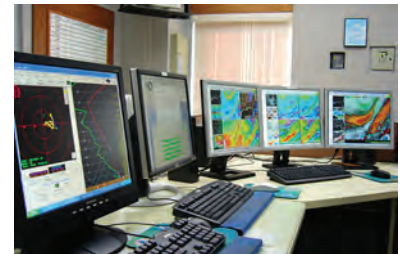
**NATIONAL WEATHER SERVICE****\$96,658,000**

Systems Acquisition: NOAA requests an increase of \$11,467,000 and 0 FTEs. This increase is composed of four initiatives, with one decrease:

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
AWIPS	24,364	24,364	24,364	24,364	24,364

Advanced Weather Interactive Processing System (AWIPS) Technology**Infusion: NOAA requests an increase of \$5,300,000 and 0 FTEs.**

The Advanced Weather Information Processing System (AWIPS) is the information technology backbone of the weather enterprise enabling forecasters to prepare and issue timely, accurate forecasts and warnings. AWIPS has been operational since 1999 and needs to transform its service delivery to better align itself with the Department of Homeland Security, Federal Aviation Administration (FAA), emergency managers, decision makers, the American public and industry. Additionally, the Next Generation Air Traffic Control System will require the future AWIPS infrastructure provided by this initiative. With this increase NOAA will: (1) develop new data visualization capabilities (total integration of display, graphical editing, and river/hydrology applications), (2) begin development of new information generation capabilities (e.g., common alerting protocol, GIS, Next Generation Warning Tool), (3) begin development of systems and processes for 4-D Weather Data Cube of weather observation and forecast data in support of NextGen and public weather mission, and (4) begin development of real-time forecast verification system to measure accuracy and bias.



AWIPS: Tallahassee, FL

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
NEXRAD	7,976	1,626	—	—	—

Next Generation Weather Radar (NEXRAD): NOAA requests a decrease of \$400,000 and 0 FTEs for Product Improvement.

This decrease of \$400,000 reflects the one-time reduction of \$7,400,000 for NEXRAD Dual Polarization funding that was provided under the American Recovery and Reinvestment Act (ARRA) of 2009 and an increase of \$7,000,000 for the acquisition and installation of a commercial weather Doppler radar to eliminate the coverage gap identified by the National Weather Service in Western Washington. Installation of this weather Doppler radar will improve overall coverage for both Western Washington and Northwest Oregon and adjacent coastal waters.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
Weather & Super Computing	22,092	22,092	22,092	22,092	22,092



Weather & Climate Supercomputing: NOAA requests an increase of \$3,000,000 and 0 FTEs to accelerate the planned NOAA hurricane forecasting system improvements in both hurricane track and hurricane intensity forecasts.

Funds are required to procure additional High Performance Computing (HPC) necessary to provide higher resolution numerical weather prediction modeling to support the acceleration of improved intensity forecasts earlier than initially planned. Additional investment in HPC in FY 2010 will enable the procurement of ~6 million CPU hours. NOAA's overall strategy to improve hurricane forecasts and warnings includes: improving the observations; accelerating and transitioning the necessary research and development into operations; improving the models based upon that research; and procuring the additional computational resources to provide operational model guidance to the National Hurricane Center (NHC) for their use in providing operational forecasts and warnings. This initiative addresses the computing necessary for accelerating hurricane intensity and track forecast model improvements.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
NOAA Weather Radio	11,337	12,614	5,594	5,594	5,590

Complete and Sustain NOAA Weather Radio: NOAA requests an increase of \$1,337,000 and 0 FTEs to continue the modernization of the NOAA Weather Radio system via the Weather Radio Improvement Project (WRIP). The most critical component of WRIP is the replacement of the obsolete and unsupportable broadcast recoding equipment (Console Replacement System (CRS). NWS will deploy the NOAA Weather Radio Broadcast Management System (NWR BMS) as a replacement for the Console Replacement System (CRS). The CRS is a main component of NOAA Weather Radio that converts text warning messages into digital voice. This conversion provides the voice warning messages which are broadcasted over NOAA Weather Radio to alert the public. It is critical that we address this issue now in order to avert potential outages which may affect our ability to disseminate timely warnings to the public.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
Profiler Weather Conversion	9,730	9,730	9,730	9,730	—



NOAA Profiler: Glenallen, AK

NOAA Profiler Weather Conversion: NOAA requests an increase of \$2,230,000 and 0 FTEs to continue the planned technology refresh and operating frequency conversion of the 20-year old NOAA Profiler Network. The Wind Profilers, vertical looking radars installed in 1988, are used as input for numerical (computer) weather models that predict clouds, precipitation, and temperature. The data also provides important indicators of where severe weather such as tornadoes and winter storms will form and is used for issuing aviation advisories, volcanic ash plumes and wildfire predictions. Research has shown Wind Profiler data improves accuracy and lead times for tornado, severe thunderstorm, flash flood, and winter storm warnings. The FY 2010 request reflects higher revised estimates for the cost of this project based on actual solicited bids. Initially NWS envisioned



an off-the-shelf (COTS) acquisition solution to its requirement to change the profilers operating frequency as well as providing system-wide tech refresh. The bids NWS received in response to its procurement called for a complete system re-design and significantly increased total cost. Without increased funding, NWS will be unable to maintain the NOAA Profiler Network in operations. The requested increase will convert thirty (30) of the profilers currently operating at 404MHz to 449MHz over a three year period. The funding will also provide a technology refresh to all thirty-five (35) profilers (20-year old systems).

Construction: NOAA requests a decrease of \$12,100,000 and 0 FTEs for NWS Construction. This decrease is composed of two initiatives:

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
WFO Construction	3,504	12,504	12,504	12,504	12,504

Weather Forecast Office (WFO) Construction: NOAA requests a net decrease of \$9,000,000 and 0 FTEs. This decrease of \$9,000,000 reflects a one-time reduction for the Weather Forecast Office. NOAA received an additional \$9,000,000 in FY 2009 from the American Recovery and Reinvestment Act (ARRA) to accelerate WFO Construction projects in Alaska Region and upgrades of Heating, Ventilation, and Air Conditioning (HVAC) systems. This construction effort is essential to bring NWS into full compliance with federal law and national and local building codes.

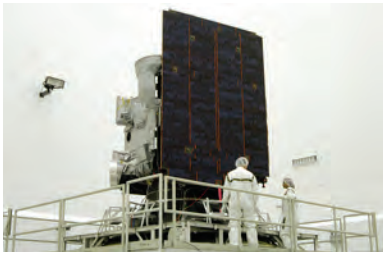
NOAA Center for Weather and Climate Prediction (NCWCP): NOAA requests a transfer of \$1,000,000 and 0 FTEs to Central Forecast Guidance and a decrease of \$3,100,000 and 0 FTEs. This transfer supports recurring NCWCP Operations & Maintenance (O&M) costs including IT infrastructure support. This decrease is a result of project completion.

NATIONAL ENVIRONMENTAL SATELLITE, DATA, & INFORMATION SERVICE **\$1,256,857,000**

Systems Acquisition: NOAA requests a net increase of \$276,269,000 and 0 FTEs. This increase is comprised of six initiatives:

Geostationary Operational Environmental Satellites (GOES): NOAA requests a net increase of \$256,338,000 and 0 FTEs to continue the procurement of spacecraft, instruments, launch services, and ground systems equipment necessary to maintain an uninterrupted flow of environmental data to users from the GOES-N and GOES-R series satellites. This increase is comprised of two sub-initiatives:

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
GOES-N	57,601	49,500	45,894	39,201	37,429
GOES-R	737,000	848,000	826,000	816,000	836,196
GOES TOTAL	794,601	897,500	871,894	855,201	873,625



GOES-N

- » **NOAA requests a planned decrease of \$15,662,000 and 0 FTEs for the GOES-N Series.** The GOES-N Series is nearing the end of its production, with two remaining satellites to be launched: GOES-O will be launched in spring 2009 and GOES-P is currently in storage with the launch date currently under review. A decrease is requested since the instrument contractors have completed delivery of all flight model instruments. However, funds are still required for spacecraft launch and storage, technical management, program management, data product development, and ground systems checks.
- » **NOAA requests an increase of \$272,000,000 and 0 FTEs for the GOES-R Series to provide continued satellites engineering development and production activities.** GOES-R is a cooperative venture between NOAA and the National Aeronautics and Space Administration (NASA). NOAA defines requirements, manages, funds, implements system integration, procures ground segments and operates the satellites. NASA serves as the agency with multi-disciplinary expertise to oversee acquisition of the instruments and space segment, develops detailed system specifications, procures and launches the spacecraft, and assists NOAA in system integration.

The GOES-R series provides for two satellites with a Life Cycle Cost (LCC) of \$7.67 billion through 2028. The series includes the following instruments which are under development: (1) the Advanced Baseline Imager (ABI), (2) Space Environment In-Situ Suite (SEISS), (3) Extreme Ultraviolet Sensor/X-Ray Sensor Irradiance Sensors (EXIS), (4) Solar Ultraviolet Imager (SUVI), and (5) Geostationary Lightning Mapper (GLM). These satellites will not only provide critical weather observations for severe weather events such as hurricanes, but will also provide key enhancements in observational capabilities for climate, oceans and coasts, and the space environment. Funding will be used for systems engineering, continued development of the satellite instruments and ground systems, risk reduction activities, transition to the system-level acquisition and operations phase of the program, and support of an initial GOES-R launch date in April 2015. In FY 2010, the program will complete the Integrated Baseline Review (IBR) of both systems.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
POES	43,135	40,874	40,874	40,874	40,874

POES: NOAA requests a planned decrease of \$22,284,000 and 0 FTEs for the continuation of the Polar-Operational Environmental Satellite Systems (POES) program.

POES launched the last satellite in the POES Series (N-Prime) in February 2009. Funds in the out years will provide satellite and instrument anomaly support to the on-orbit POES satellites, maintain the ground system for their operation and support the maintenance and testing of U.S. instruments on the MetOp satellites in FY 2010.

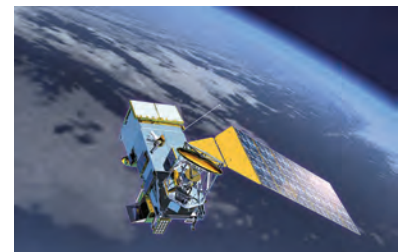


(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
Altimetry Mission - Jason 3	20,000	50,000	53,000	29,000	2,000

Jason-3: NOAA requests an increase of \$20,000,000 and 0 FTEs to initiate a satellite altimetry mission to provide continuity of precise measurement of sea surface height for ocean climatology and ocean weather applications. Ocean climatology includes global sea-level rise, decadal variability in the ocean, seasonal/inter-annual variability, and coastal variability and its impact on ecosystems. Ocean weather involves operational oceanography, surface wave forecasting and evaluation, and hurricane intensity forecasting. Jason 3 is a satellite altimetry mission, which will continue the nearly 20 year data record that was started with the altimetry missions of TOPEX/POSEIDON and Jasons-1 and -2. Jason-3 is planned as a joint mission with the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT). NOAA will provide the launch services, the microwave radiometer, precision orbit components, ground system and operations. EUMETSAT will provide the spacecraft, altimeter, precision orbit components, as well as ground system and operations. NOAA and EUMETSAT will jointly develop mission concept and determine roles and responsibilities for system acquisition, the deployment, and operations. This request allows NOAA and EUMETSAT to launch Jason-3 in CY 2013, providing an overlap with the Jason-2 mission of 6 months. The overlap period is necessary to conduct initial cross-calibration and validation activities, complete on-orbit check-out operations, and maintain consistent observations of sea surface height between successive altimeter missions. The request is contingent on EUMETSAT demonstrating its funding commitment to the program in FY 2009.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
NPOESS	382,200	428,800	383,900	413,800	501,700

NPOESS: NOAA requests an increase of \$94,215,000 and 0 FTEs for NOAA's contribution (additional funding is provided by the USAF) to tri-agency NPOESS program for the development and production of the NPOESS spacecraft and instruments, ground system readiness for NPOESS Preparatory Project (NPP) Launch, as well as operations and maintenance. NPOESS will address NOAA's requirements to provide global environmental data, such as cloud imagery, sea surface temperature, and atmospheric ozone concentrations which are used in numerical weather prediction models for near term (1-3 day) and mid-term (3-5 day) forecasts. NPOESS will also provide space weather observations, search and rescue detection capabilities, as well as direct read-out and data collection products and services to customers. The NPOESS Program will consist of U.S. satellites in two orbits (early morning and afternoon) and will use data from the European Meteorological Operational (MetOp) satellites for the mid-morning orbit, while providing flexibility to reassign Defense Meteorological Satellite Program (DMSP) satellites to the mid-morning orbit depending on the health of the constellation. The



*National Polar-orbiting Operational Environmental Satellite System (NPOESS)
(Artist Representation)*



NPOESS Program seeks to provide an integrated satellite program that meets the needs and mission requirements of both the civilian and military communities. Data and imagery obtained from NPOESS satellites will help increase timeliness, accuracy, and cost-effectiveness of public warnings and forecasts of climate and weather events, thus reducing the potential loss of human life and property and advance the national economy.

The FY 2010 request for NPOESS supports a revised life-cycle cost estimate of \$14 billion through 2024 to reflect additional resource requirements necessary to address continued difficulties in instrument developments and outyear operations and sustainment costs.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
NDE	4,455	4,455	4,455	4,455	4,455

NPOESS Preparatory Data Exploration (NDE): NOAA requests an increase of \$2,000,000 and 0 FTEs to prepare its ground systems for the NPOESS Preparatory Project (NPP) satellite launch in FY 2011. These ground system upgrades are necessary for NESDIS to process and distribute the large volume of NPP observations and will enable NOAA Operational Centers to improve their services. Specifically, funds will allow the procurement of equipment and the development of new science products necessary for NESDIS to ingest, process, and stage the large volume of environmental observations from the NPP satellite starting in 2011. The NDE project will develop and implement capabilities to process and distribute NPOESS products and services, starting with the NPP satellite. The NPP satellite mission is specifically undertaken to permit the users and developers to address the risks associated with the new technologies of NPOESS Program. The NDE project has been established to make NPP and NPOESS observations available to NOAA forecasters and climate scientists, to other Government agencies, and to civilian entities such as universities and private sector forecasters. The project intends to replace poorly integrated legacy systems with centralized, reusable capabilities. By providing a common IT architecture for science development, system test and operational systems, NDE will eliminate the need to operate and maintain the stovepipe processing systems currently in use to process and distribute fourteen different polar product applications. The NDE infrastructure will be scalable and may serve as a model for future satellite data processing systems.

(BA IN THOUSANDS)	FY2010 REQUEST	FY2011 ESTIMATE	FY2012 ESTIMATE	FY2013 ESTIMATE	FY2014 ESTIMATE
Climate Sensors	0	60,000	73,000	73,000	93,000

Restoration of Climate Sensor Data Records: NOAA requests a one-time decrease of \$74,000,000 and 0 FTEs. This one-time decrease is a result of forward-funding provided in the American Recovery and Reinvestment Act (ARRA) of 2009 which enabled NOAA to accelerate development work on the Clouds and the Earth Radiant Energy System (CERES) and the Total Solar Irradiance System (TSIS) climate sensors. In FY 2010, using funds provided in the Omnibus Appropriations Act, 2009 and ARRA, NOAA will continue to work with NASA in developing the most cost-effective options for acquiring and launching



the CERES and TSIS climate sensors, including exploring all reasonable options in terms of cost, schedule, and mission continuity. With the prior year funding, CERES flight model 5 will be completed for launch on NASA's NPP satellite and development of a CERES flight model 6 and the TSIS instrument will be initiated. This effort is necessary to fill the likely gap in earth radiation and total solar irradiance observations between NASA's Earth Observing Satellites (EOS) and the NPOESS mission. It is anticipated that CERES flight model 6 will be manifested on the NPOESS C1satellite and TSIS on either NPOESS C1 or C2.

PROGRAM SUPPORT
\$5,000,000

Construction: NOAA requests a net decrease of \$54,250,000 and 0 FTEs in the Program Support Construction sub-activity. This decrease is comprised of one initiative:

Pacific Regional Center: NOAA requests a decrease of \$54,250,000 and 0 FTEs for the construction of the Pacific Regional Center. Through the funding in the Omnibus Appropriations Act, 2009 and the American Recovery and Reinvestment Act of 2009, NOAA will complete the Main Facility construction phase of the new Pacific Regional Center on Ford Island in Honolulu, HI.

OMAO Fleet Replacement: NOAA requests a decrease of \$6,500,000 and 0 FTEs for the OMAO fleet replacement sub-activity. This is comprised of four initiatives:

Fisheries Survey Vessel: NOAA requests an increase of \$3,000,000 and 0 FTEs to design a new shallow-draft vessel, Fisheries Survey Vessel (FSV) 5. A shallow-draft FSV will be needed to replace Oregon II which is among the oldest ships in the NOAA Fleet at 44 years of service life by FY 2010. The shallow-draft FSV will operate in near-shore coastal waters as shallow as 30 feet and is intended to be the primary ship supporting Gulf of Mexico living-marine resource, habitat, and integrated-ecosystem surveys. The Southeast Fisheries Science Center (SEFSC) must survey near-shore waters to maintain decades-long time series. The OREGON II is unable to operate safely in 30-42 feet and this limits critical fishery-independent sampling in nursery and high-density areas responsible for the majority of fishery resources and the high-productivity of the Gulf of Mexico ecosystem. From FY 2000 to FY 2006, Oregon II lost an average of 19 days of operation each year due to engineering related problems. If a suitable replacement ship is not acquired, Oregon II will reach the end of its useful service life and will be removed from service in FY 2017.

NOAA Ship *Bell M. Shimada*: NOAA requests a decrease of \$1,000,000 and 0 FTEs to reflect the completion of the calibration of *Bell M. Shimada*. The ship will be homeported on the West Coast and will collect data to manage fish stocks such as Pacific Whiting and to monitor marine mammals in the Pacific Northwest.



NOAA Ship Bell M. Shimada Launch



Hydro Survey launch construction: NOAA requests a decrease of \$2,400,000 and 0 FTEs to reflect the completion of the construction of hydrographic survey launches equipped with multibeam sonar equipment. NOAA received funds in the FY 2009

ARRA to accelerate this project. The launches increase the number of miles of navigationally significant waters that can be surveyed in order to update the nation's nautical charts. These charts directly relate to the safety of the United States' commercial and recreational waterways.

NOAA Ship *Rainier*: NOAA requests a decrease of \$6,100,000 and 0 FTEs to reflect the completion of the major repair period of the NOAA Ship *Rainier*. The ship is homeported in Seattle, Washington and conducts coastal hydrographic survey operations in Alaskan coastal waters.

